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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/808,992

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Rainer Schoenfeld

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EXAMINER

SELLERS, ROBERT E

ART UNIT

PAPER NUMBER

1712

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/808,992		SCHOENFELD, RAINER	
	Examiner		Art Unit	
	Robert Sellers		1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 2-7, 11, 12, 14-17, 23 and 25-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 8-10, 13, 18-22 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/24 & 7/1/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-24, drawn to a composition comprising a polycarboxy-functional prepolymer of the structure or its reaction product with epoxy resin(s), classified in class 525, subclass 420.
 - II. Claims 25-29, drawn to a process for adhesively bonding a first material surface to a second material surface, classified in class 156, subclass 331.1.

The inventions are independent or distinct from each other because:

2. Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case, the product as claimed can be used in a materially different process of using that product such as a process of coating a substrate.

Restriction for examination purposes as indicated is proper because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification.

3. The restriction has been reformulated since the epoxy-reactive groups-containing polymer of claims 2-5, the latent hardener of claims 11 and 12, and the hyperbranched polyester of claim 23 does not lose its identity within the composition until curing ensues.

4. This application contains claims directed to the following patentably distinct species:

- (a) The reactants for the polycarboxy-functional prepolymer of the structure.
- (b) The polycarboxy-functional prepolymer alone or its reaction product with an epoxy resin, wherein if the reaction product with the epoxy resin is elected, a particular species thereof is identified.
- (c) The presence or absence of the epoxy-reactive groups-containing polymers of claims 2-5, wherein if its presence is elected, a particular species is indicated.
- (d) The presence or absence of the latent hardeners of claims 11 and 12, wherein if its presence is selected, a particular species thereof is revealed.
- (e) The presence or absence of the hyperbranched polyester of claim 23, wherein if its presence is chosen, a particular species thereof is identified.

The species are independent or distinct because the myriad species of reactants for the polycarboxy-functional prepolymer of the structure, the diverse types of epoxy-reactive groups-containing polymer and the various kinds of latent hardeners necessitates numerous burdensome searches within classes 525 and 528.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-29 are generic.

A reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species (MPEP § 809.02(a)).

During a telephone conversation with Stephen D. Harper on April 5, 2006, a provisional election was made with traverse to prosecute the invention of Group I and the following species:

- (a) Amino-terminated polypropylene glycol and trimellitic anhydride.
- (b) The polycarboxy-functional prepolymer alone.
- (c) The absence of the epoxy-reactive groups-containing polymer.
- (d) The absence of the latent hardener.
- (e) The absence of the hyperbranched polymer.

The elected invention and species involve claims 1, 8-10, 13, 18-22 and 24. Affirmation of this election must be made by applicant in replying to this Office action. Claims 25-29 are withdrawn from further consideration under 37 CFR 1.142(b) as being drawn to a non-elected invention. Claims 2-7, 11, 12, 14-17 and 23 are withdrawn as being directed to non-elected species.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8-10, 13 and 18-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Myachajlowsky et al. Patent No. 5,552,254.

5. Myachajlowsky et al. reports a polyamic acid resin having the formula depicted in column 6, lines 46--57 prepared via the reaction of a dianhydride such as pyromellitic dianhydride (col. 11, Example IV) and a diamino-terminated polyoxyalkylene compound (col. 3, line 37 to col. 4, line 14). Although the claimed moiety represented as $[X-H]_{m-(n+p)}$ wherein X is $-NR_2-$ is not explicitly exhibited, the R group in the formula of patentees is a poly(alkyleneoxy)alkylene group which contains a terminal amino group.

Claims 1, 9, 10, 13, 18, 19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by the Journal of Polymer Science, B: Polymer Physics article by Lei et al.

6. Lei et al. (page 800, Scheme 1) shows the reaction of poly(tetramethylene oxide) glycol and poly(ethylene oxide) glycol and benzophenone tetracarboxylic dianhydride within the claimed structure wherein X is -O-, Cy is an aromatic ring and p is zero. Although the claimed moiety $[X-H]_{m-(n+p)}$ wherein X is -O- is not explicitly exhibited, the tetramethylene and ethylene oxide units quantified by n contains terminal hydroxyl groups.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 8-10, 13, 18-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 2000-75484 (Japanese '484) and Japanese Patent No. 2002-338929 (Japanese '929).

7. Japanese '484 (CAPLUS abstract, second page, last IT and third page, registry no. 129245-85-8) shows the a resin having amido, oxyalkylene and carboxyl groups derived from the elected species of Jeffamine D-2000 (polyoxypropylene diamine according to registry no. 9046-10-0) and trimellitic anhydride. The computer translation is confusing due to the literal description and therefore is not included.

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8. Japanese '929 (abstracts and translation, page 1, paragraph 5 and page 6, paragraph 39, Example) shows a polyimide precursor (i.e. a polyamic acid) obtained from tetracarboxylic dianhydride such as benzophenone tetracarboxylic dianhydride (a suitable reactant according to page 6, line 29 of the specification) and a bis(aminoethyl) ether.

9. The structure of the reaction products of Japanese '484 and '929 are not revealed. Based on the equivalent reactants of the prior art and claims, the structures of Japanese '484 and '929 conform to that claimed.

Claims 1, 9, 10, 18, 19, 21, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 52-59700 (Japanese '700), Housel et al. Publication No. 2002/0183443, Gainer et al. Patent No. 4,966,920; Japanese Patent No. 11-349896 (Japanese '896), Great Britain Patent No. 1,256,267 and Japanese Patent No. 2003-113240 (Japanese '240).

Japanese '700 (abstracts) shows a polyester prepared from a polyalkylene glycol and trimellitic anhydride.

10. Housel et al. (page 8, Table 1 and Table 2, AFP Sample 44) shows the reaction product of polypropylene glycol (PPG) and a mixture of pyromellitic dianhydride (PMDA) and trimellitic anhydride (TMA).

11. Gainer et al. (col. 5, Table 1) shows the reaction product of pyromellitic dianhydride and polypropylene glycol (Example 7) wherein maleic anhydride can also be included (Example 12, addressing the non-elected species of withdrawn claim 7 wherein the unsaturated moiety $[-X-C(=O)-R^3-CO_2H]_p$ is present).
12. Japanese '896 (CAPLUS abstract) shows the reaction of polyethylene glycol with pyromellitic anhydride as a chain extender.
13. The British patent (page 2, Example 1) shows the reaction of polyethylene glycol with pyromellitic dianhydride.
14. Japanese '240 shows a crosslinkable adhesive (translation, pages 16-17, paragraph 71) comprising the reaction product of polyethylene glycol and pyromellitic anhydride (CAPLUS abstract and translation, page 17, paragraph 73, Example 1).
15. Each of the references show a reaction product within the claimed structure wherein R^1 is a polyalkylene glycol, X is -O-, Cy is an aromatic ring and p is zero. Although the structures of the prior art reaction products are not illustrated, they fall within that claimed based on the equivalent reactants employed in their formation.
16. None of the cited prior art recites the claimed structure wherein -X- is -S-.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

17. Schoenfeld et al. Patent No. 6,884,854 (equivalent to PCT Publication No. WO 03/055957 cited in the Information Disclosure Statements) sets forth a reaction product having at least one imide group and carboxyl group derived from a difunctional amino-terminated polymer and a tri- or tetra-carboxylic acid anhydride, an epoxy-reactive groups-containing copolymer and a latent hardener (col. 5, lines 14-33). The claimed structure precludes the presence of the imide group(s) in the reaction product of the reference.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Robert Sellers
Primary Examiner
Art Unit 1712